

Poster #40

EFFICACY OF A SHORT 18-SESSION INPATIENT REHABILITATION PROGRAM FOR CHRONIC RESPIRATORY DISEASES

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Rationale: Pulmonary rehabilitation programs are well established for improving exercise capacity and quality of life in patients with chronic lung diseases. However, our patients find travel three times a week to an outpatient facility logistically difficult, especially when assistance of a caregiver is required and even exhausting as many depend on public transportation.

Objectives: A short intensive inpatient program was hence started to help these patients, and this study examines its efficacy.

Methodology: Twelve male patients (8 with COPD, 2 with bronchiectasis, 2 with interstitial fibrosis) aged 64.5 ± 11.4 years were recruited over a 5-month period. All patients underwent lung function tests, 6-minute walk test, as well as 3 quality of life questionnaires on admission – these were repeated on completion of the program. Each patient underwent 2 sessions of physical therapy daily, for a total of 18 sessions over the 10 to 14 days of hospital stay. Each session consisted of a 5-minute warm-up, 30 to 40 minutes of aerobic exercises, and strengthening exercises using elasticity-graduated Theraband[®] and free weights.

Results: Paired analysis, with $P < .05$ considered significant. All measures except FEV1, showed significant improvement from admission to discharge.

Conclusion: We hence conclude that a short 18-session intensive inpatient pulmonary rehabilitation program is able to improve 6-minute walk test distance and quality of life for patients with chronic respiratory diseases.

Variables post-pre values (units)	Number (patients)	Mean change \pm SD	Significance (2-tailed)
FEV ₁ (%)	8	0.19 \pm 7.10	.938
6-min walk test (m)	12	29.4 \pm 44.5	.043
CRDQ-Dyspnea	12	4.3 \pm 5.3	.016
CRDQ-Fatigue	12	3.1 \pm 3.7	.014
CRDQ-Emotional	12	3.7 \pm 4.8	.023
CRDQ-Mastery	12	2.7 \pm 4.1	.047
CRDQ-Total score	12	13.8 \pm 12.4	.003
SF36-Physical Function	12	12.1 \pm 17.9	.039
SF36-General Health	12	11.8 \pm 13.2	.010
SGRQ-Symptoms	12	10.6 \pm 16.0	.043
SGRQ-Activity	12	6.7 \pm 8.8	.024
SGRQ-Impact	12	11.9 \pm 14.0	.013
SGRQ-Total score	12	10.1 \pm 9.2	.003

Poster #41

THE EFFECTIVENESS OF COMBINED AEROBIC AND RESISTANCE TRAINING IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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In patients with chronic obstructive pulmonary disease (COPD) aerobic exercise training has been demonstrated to reduce the functional limitations imposed by this disease. In general, resistance-training increases muscle strength and this may be related to the improved performance of the activities of daily living and also by improving endurance and functional capacity.

The purpose of this study was to assess the effectiveness of combined aerobic and resistance training exercise compared with aerobic training alone in patients with COPD.

Twenty individuals with moderate COPD, were randomly assigned to 2 groups: 10 patients (age, 66 ± 6 years; weight, 81.5 ± 9.8 kg; height, 177 ± 5.0 cm) to combined exercise training (CG), and 10 (age, 66 ± 4 years; weight, 70.0 ± 11.4 kg; height, 163 ± 9.5 cm) to aerobic training (AG), for 10 weeks, 3 times a week. Outcome variables included cardiopulmonary function (Graded Exercise and 6-min walk tests), muscular strength; and health status through the completion of 2 Questionnaires (SF-36 and QRSg), before and after training program. For the CG the aerobic exercise was set at 60-70% HRreserve for 30 minutes and the resistance exercise was performed in 5 weight machines, 2 sets of 8-12 repetitions at 50-70% 1RM. The AG trained at 60-70% HRreserve for 60 minutes.

Both groups increased ($P < .05$) functional capacity (VO_{2peak} CG - $25 \pm 18\%$, AG - $26 \pm 25\%$; GXT time and power CG - $22 \pm 7\%$ and $42 \pm 30\%$, AG - $31 \pm 17\%$ and $65 \pm 47\%$ respectively; 6-min walk test GC - $12 \pm 3\%$, AG - $7 \pm 4\%$) and health status. The CG group exhibited greater changes ($P < .05$) than the AG group for the ventilatory equivalent (CG - $16 \pm 13\%$; AG, $5 \pm 17\%$), 6-min walk; strength, health status in symptom and activity domain, and physical function.

The combined exercise training, for COPD patients, seems to be more effective, with better results in strength, exercise capacity and health status compared with aerobic exercise alone.

Poster #43

CHANGES IN SUPPLEMENTAL OXYGEN USE AS A RESULT OF PULMONARY REHABILITATION

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Introduction: Important goals in pulmonary rehabilitation are to evaluate supplemental O₂ needs in patients with chronic lung disease and improve adherence with prescribed therapy. The purpose of this study was to evaluate the effects of pulmonary rehabilitation on the use of O₂ therapy.

Methods: We reviewed O₂ prescription data in 37 consecutive patients with chronic lung disease [60% male, age 68 ± 9 (SD) yrs, FEV₁ = 39 ± 12 %pred., FEV₁/FVC = $42 \pm 13\%$] before and after a 6-week pulmonary rehabilitation program. During pre-program evaluation, self-report data obtained from structured interviews included physician's prescription, type of delivery system, flow settings, and adherence with activities of daily living. O₂ use during rehabilitation was obtained from treatment logs.

Results: 17 of 37 (46%) patients required supplemental O₂. There were no differences between O₂ and non-O₂ users with regard to age, gender, FEV₁, and FEV₁/FVC ($P > 0.05$). During pulmonary rehabilitation, 8 (47%) patients changed O₂ flow rates (7 increased, 1 decreased), 6 (35%) had changes to a more appropriate system, and 12 (71%) improved adherence to O₂ therapy.

Conclusions: Pulmonary rehabilitation plays an important role in optimizing O₂ therapy in patients with chronic lung disease.